

# **POC-155**

**Point-of-Care Terminal with 15"  
TFT LCD**

## **User Manual**

## Copyright

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This manual is for the POC-175.

Part No. 2006015500

1st Edition, Printed in Taiwan Sep 2006

## FCC Class B

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with this user manual, it may cause harmful interference to radio communications.

Note that even when this equipment is installed and used in accordance with this user manual, there is still no guarantee that interference will not occur. If this equipment is believed to be causing harmful interference to radio or television reception, this can be determined by turning the equipment on and off. If interference is occurring, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

<b>Warning</b>	<i>Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.</i>
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<b>Caution</b>	<i>Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.</i>
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## Packing List

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Before installing your Point of Care Terminal, ensure that the following materials have been received:

- POC-155 series Point of Care Terminal
- User manual
- Accessories for POC-155
  - Y-shaped adapter for PS/2 mouse and keyboard
  - Power cord (1.8 m) - USA type (UK, German types are available on request)
  - “Drivers and Utilities” CD-ROM disc
  - Mounting kits and packet of screws

<b>Warning</b>	<i>To prevent electric shock, Do not remove cover. No user serviceable parts inside, refer servicing to qualified personnel.</i>
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## Additional Information and Assistance

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1. Visit the Advantech websites at **www.advantech.com** or **www.advantech.com.tw** where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
  - a Product name and serial number
  - b Description of your peripheral attachments
  - c Description of your software (operating system, version, application software, etc.)
  - d A complete description of the problem
  - e The exact wording of any error messages

This equipment is a source of electromagnetic waves. Before use please, make sure that there are not EMI sensitive devices in nearby which may malfunction therefore.

<b>Warning</b>	<p><i>1. Input voltage rated 100-240 V<sub>AC</sub>, 50-60 Hz, 4-2 A (AC Mode)</i></p> <p><i>2. Use a 3 V @ 195 mA lithium battery (Model No. BR2032)</i></p> <p><i>3. Packing: please carry the unit with both hands, handle with care</i></p> <p><i>4. Our European representative:</i> <i>Advantech Europe GmbH</i> <i>Kolberger Straße 7</i> <i>D-40599 Düsseldorf, Germany</i> <i>Tel: 49-211-97477350</i> <i>Fax: 49-211-97477300</i></p> <p><i>5. Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with a dry applicator</i></p>
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## Safety Instructions

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1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.

7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
  - a The power cord or plug is damaged.
  - b Liquid has penetrated into the equipment.
  - c The equipment has been exposed to moisture.
  - d The equipment does not work well, or you cannot get it to work according to the user manual.
  - e The equipment has been dropped and damaged.
  - f The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.**
16. If your computer is losing time or the BIOS configuration resets to defaults, the battery has no power.

<b>Caution</b>	<p><i>1. Do not replace the battery yourself. Please contact a qualified technician or your retailer.</i></p> <p><i>2. The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if the battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.</i></p>
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17. IMPROPER VESA MOUNTING CAN RESULT IN SERIOUS PERSONAL INJURY! VESA mount installation should be carried out by a professional technician. Please contact the service technician or your retailer if you need this service.
18. CLASSIFICATION:  
Supply Class I adapter  
No applied part  
IPX1  
Continuous Operation  
Not AP or APG category
19. Disconnect device: Appliance inlet.
20. Follow national requirements when disposing of the unit.
21. Maintenance: to properly maintain and clean the surfaces, use only the approved products or clean with a dry applicator.
22. Contact information:  
No.1, Alley 20, Lane 26, Reuiguang Road Neihu District, Taipei, Taiwan 114, R.O.C.  
TEL: (02)27927818
- 23.



**Medical Equipment**  
With Respect to Electric Shock,  
Fire, and Mechanical Hazards Only,  
In Accordance with UL 60601-1,  
CAN/CSA C22.2 No. 601.1, and  
IEC 60601-1

24. This equipment must not be used for life support systems.

25. Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment). Furthermore all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60XXX certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.
26. Users must not to contact SIP/SOPs and the patient at the same time.
27. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70dB (A).

<b>DISCLAIMER</b>	<i>This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein</i>
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## **General Information**

This chapter gives an overview of the POC-155.

Sections include:

- Introduction
- Specifications
- Cleaning/Disinfecting
- LCD Specifications
- Dimensions

# Chapter 1 General Information

## 1.1 Introduction

---

The POC-155 is a multimedia Pentium® Mobile processor-based computer that is designed to serve as a Point of Care terminal (POC). It is a PC-based system with 15" color TFT LCD display, on-board PCI express Ethernet controller, multiple COM port interfaces and 18-bit stereo audio controller. With a built-in CD-ROM drive and mini PCI expansion slot, the POC-155 is as compact and user-friendly as a notebook computer. This simple, complete and highly integrated multimedia system lets system integrators easily build a Point of Care Terminal into their applications. Common industrial applications include factory automation systems, precision machinery, and production process control. It is also suitable for many non-industrial applications, including interactive kiosk systems, entertainment management, and car park automation. The POC-155 is a reliable, cost-effective solution to your application's processing requirements.

## 1.2 Specifications

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### 1.2.1 General

- **Dimensions (W x H x D):** 414 x 339 x 115 mm (16.30" x 13.34" x 4.52")
- **Weight:** 6.5 kg (14.4 lb)
- **Power supply:**
  - AC model: (180 watts)
  - Input voltage 100 ~ 240 VAC, 4/2 A max. @ 50 ~ 60 Hz
  - Output voltages +5 V @ 12 A, +12 V @ 12 A, +3.3 V @ 16.8 A, +5 Vsb @ 2.0 A, -12V @ 0.8 A
- **Cooling fan dimensions (L x W x H):** 60 x 60 x 10 mm (2.4" x 2.4" x 0.4")
- **Disk drive housing:** Space for one 2.5" HDD, one 12.7 mm Compact CD-ROM drive.
- **Front panel:** IP65/NEMA compliant
- **Whole System:** IPX1 compliant

### 1.2.2 Standard PC functions

- **CPU:** Socket 479 Intel® Pentium® Mobile up to 2.0 GHz
- **BIOS:** Award 512 KB Flash BIOS, supports Plug & Play, APM
- **Chipset:** Intel® 915GM GMCH, 82801FBM (ICH6-M)
- **Front side Bus:** FSB 533/400 MHz
- **RAM:** 240 pins DDR2 DIMM slots x 2, supports unbuffered 400/533 MHz DDR2 SDRAM (Non ECC), capacity maximum to 2 GB
- **IDE interface:** ATA/100 x 1. Supports one IDE device.
- **SATA interface:** SATA x 1. Supports one SATA device.
- **Parallel port:** Parallel port x 1, supports SPP/BPP/EPP/ECP parallel mode.
- **Serial ports:** RS-232 port x 3, they are all compatible with 16C550 UARTs. COM2 has optical isolation and supports RS-422/485 by jumper selection; COM1/COM2/COM3 support +5 by jumper selection
- **Universal serial bus (USB) port:** USB 2.0 port x 8 (6 external, 2 internal)
- **IEEE 1394 port:** IEEE 1394a port x 3.
- **Expansion slot:** PCI 33 MHz slot x 1
- **Watchdog timer:** 62-level, interval 1 ~ 62 seconds. Automatically generates system reset when the system stops due to a program error or EMI.
- **CMOS Battery (BIOS):** 3.0 V @ 195 mA lithium battery

### 1.2.3 Flat panel interface

- **SDVO Interface:** Chronitel 7308A Single/Dual LVDS transmitter
- **Display resolution:** Supports LVDS LCD panel resolutions up to 1600 x 900
- **Graphic Chipset:** Intel® Graphics Media Accelerator (GMA) 900
- **Shared memory:** Dynamic Video Memory Technology (DVMT) 3.0 to dynamically allocate up to 128 MB of system memory for graphics usage.
- **Display type:** Simultaneously supports CRT

### 1.2.4 Audio function

- **Chipset:** Realtek ALC203, compliant with AC'97 rev 2.2
- **Audio controller:** 18-bit codec, full-duplex stereo codec

- **Audio interface:** Microphone-in, Line-in, Line-out
- **Internal Speaker:** 1 W speaker x 2, Full alarm volume > 70 dB(A) 1 meter

### 1.2.5 Ethernet interface

- **Chipset:** Marvell 88E8053 PCI express high performance Gigabit Ethernet controller
- **Ethernet interface:** Gigabit Ethernet port x 2. Fully integrated Gigabit Ethernet Media Access Control (MAC) and Physical Layer (PHY) functions, each providing a standard IEEE 803.3 Ethernet interface for 100BASE-T, 100BASE-TX and 10BASE-T applications.

### 1.2.6 Optional modules

- **CPU:** Intel® Pentium® M 1.6 GHz, 1.8 GHz, 2.0 GHz
- **Memory:** 256 MB / 512 MB / 1 GB, DDR2 400/533 MHz SDRAM
- **HDD:** 2.5", 40 GB / 60 GB / 80 GB, 4200rpm, PATA HDD or 40 GB / 80 GB, 5400 rpm, SATA HDD
- **Touchscreen:** Analog resistive
- **CD-ROM drive:** Compact 24X CD-ROM or above
- **COMBO drive:** Compact 8X DVD-ROM, 24X CD-ROM, 24X CD-R, 24X CD-RW
- **DVD-RW drive:** Compact 8X DVD-ROM, 24X CD-ROM, 24X CD-R, 10X CD-RW, 4X DVD-RW
- **Mini PCI WLAN module:** 802.11b/g WLAN

### 1.2.7 Touchscreen (optional)

Type	Analog Resistive
Resolution	Continuous
Light Transmission	75%
Controller	RS-232 interface (uses COM4)
Power Consumption	+5 V @ 200 mA
Software Driver	Supports Windows 2000, Windows XP
Durability (touches in a lifetime)	30 million

*Table 1.1: Touchscreen specification*

Note	<i>The Point of Care Terminal with the optionally installed touchscreen will share COM4. Once the touchscreen is installed, COM4 cannot be used for other purposes.</i>
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### 1.2.8 Environment

- **Temperature:** 0 ~ 40° C (32 ~ 104° F)
- **Relative humidity:**
  - 20% ~ 90% RH at 10 ~ 40° C operating
  - 10% ~ 95% RH at -20 ~ 50 °C Storage (Non-condensing)
- **Shock:** 30G, half sine, 11 msec duration
- **Vibration Sinusoidal Test:** 5 ~ 500 Hz, 1G acceleration, non-operating
- **Power MTBF:** 100,000 hrs
- **Altitudes:** Operating: 6,000 feet; Shipping: 40,000 feet
- **Certifications:**
  - EMC: CE, FCC approved
  - Safety: UL60601-1 and EN60601-1 approved.
  - This device bears the CE label in accordance with the provisions of the EMC Directive 89/336/EMC.

## 1.3 Cleaning/Disinfecting

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During normal use of the POC-155 may become soiled and should, therefore, be cleaned regularly. Agents: Green tinctured soap and Enzymatic detergents.

Steps:

1. Wipe the POC-155 with a clean cloth that has been moistened in the cleaning solution.
2. Prepare agent as per the manufacturer's instructions or hospital protocol.
3. Wipe the POC-155 thoroughly with a clean cloth

<b>Cautions</b>	<p><i>Do not immerse or rinse the POC-155 and its peripherals. If you accidentally spill liquid on the device, disconnect the unit from the power source. Contact your Biomed regarding the continued safety of the unit before placing it back in operation.</i></p> <p><i>Do not spray cleaning agent on the chassis.</i></p> <p><i>Do not use disinfectants that contain phenol.</i></p> <p><i>Do not autoclave or clean the POC-155 or its peripherals with strong aromatic, chlorinated, ketone, ether, or Esther solvents, sharp tools or abrasives. Never immerse electrical connectors in water or other liquids.</i></p>
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## 1.4 LCD Specifications

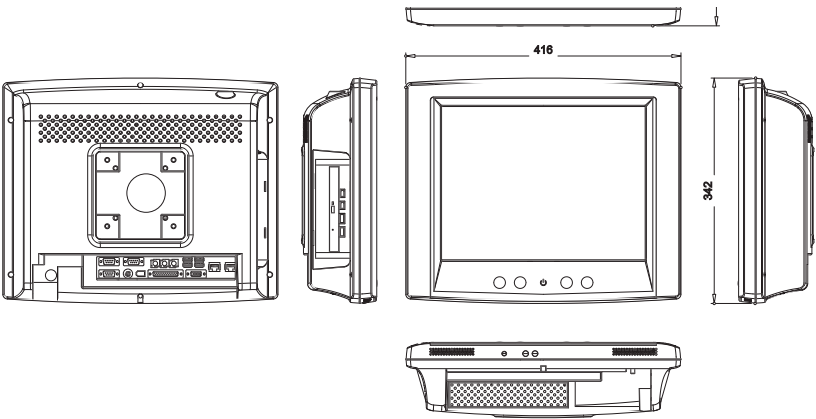
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- **Display type:** 15" TFT LCD.
- **Resolution:** 1024 x 768
- **Colors:** 262,144 (6 bits/color)
- **Dot size (mm):** 0.264 x 0.264
- **Viewing angle:** 120°
- **Luminance:** 350 cd/m<sup>2</sup>
- **Contrast ratio:** 400:1
- **LCD MTBF:** 50,000 hours
- **Backlight lifetime:** 50,000 hours @ Standard current 6.5 ±0.5 mA



# 1.5 Dimensions

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*Figure 1.1: Dimensions of the POC-155*



## **System Setup**

This chapter gives hardware and system software installation information.

Sections include:

- A Quick Tour of the POC-155
- Installation Procedures
- Running the BIOS Setup Program
- Installing System Software
- Installing the Drivers

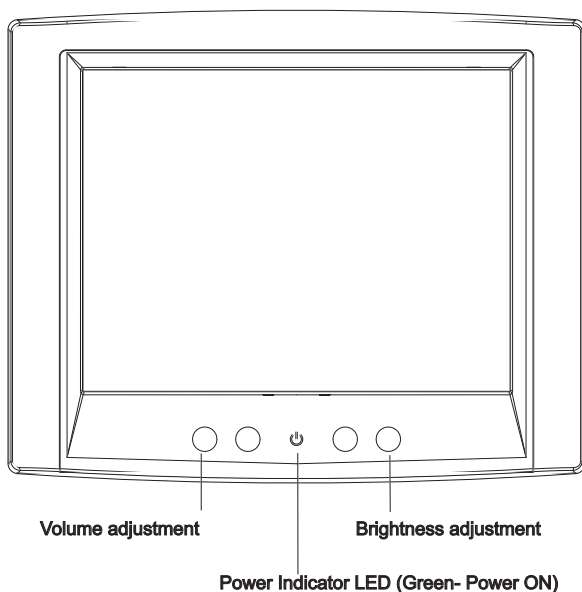
# Chapter 2 System Setup

## 2.1 A Quick Tour of the POC-155

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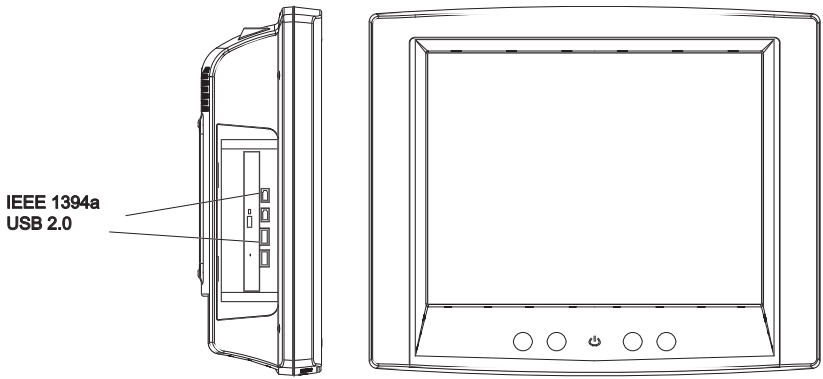
Before you start to set up the POC-155, take a moment to become familiar with the locations and purposes of the controls, drives, connections and ports, which are illustrated in the figures below.

When you place the POC-155 upright on the desktop, its front panel appears as shown in Figure 2-1.



***Figure 2.1: Front View of the Point of Care Terminal***

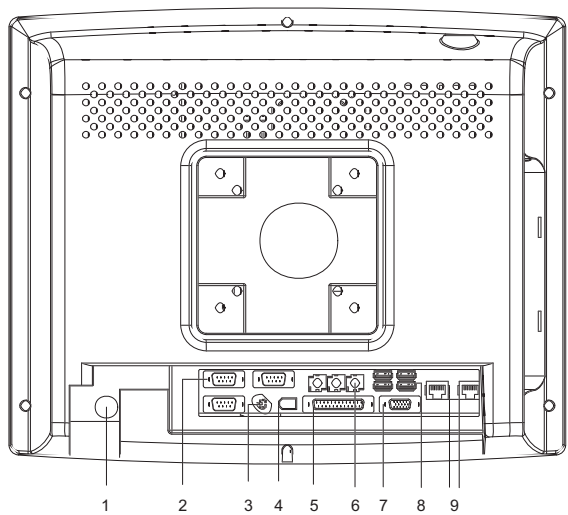
When you look at the left side of the panel PC, you will see the CD-ROM drive, two USB 2.0 ports and two IEEE1394a ports, as shown in Figure 2-2.



***Figure 2.2: Left side view of the Point of Care Terminal***

When you turn the Point of Care Terminal around and look at its rear cover, you will find the PCI expansion slot located on the left side. This slot is covered by a side panel cover. The sunken I/O section is at the bottom of the panel PC, as shown in Figure 2-3. (The I/O section includes

various I/O ports, including serial ports, parallel port, Ethernet ports, USB ports, the microphone jack, and so on).



**Figure 2.3:**

1	Functional Earth Ground Connector
2	Isolated RS-232 COM port (COM1 /COM2/COM3)
3	PS/2 Mouse/Keyboard Port
4	IEEE-1394a Port
5	Parallel Port
6	Line-out/Line-in/MIC-in Port (From left to right)
7	D-sub VGA port
8	USB 2.0 Ports
9	RJ-45 Gigabit LAN Port

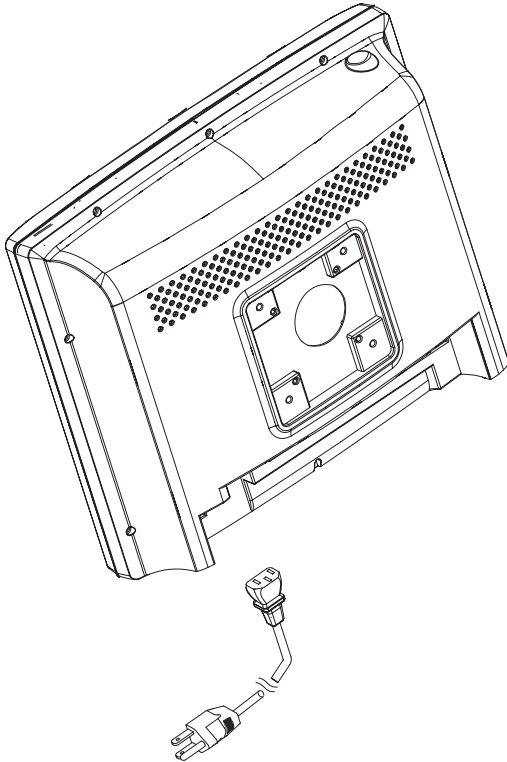
## 2.2 Installation Procedures

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### 2.2.1 Connecting the power cord

Be sure to always handle the power cords by holding the plug ends only.

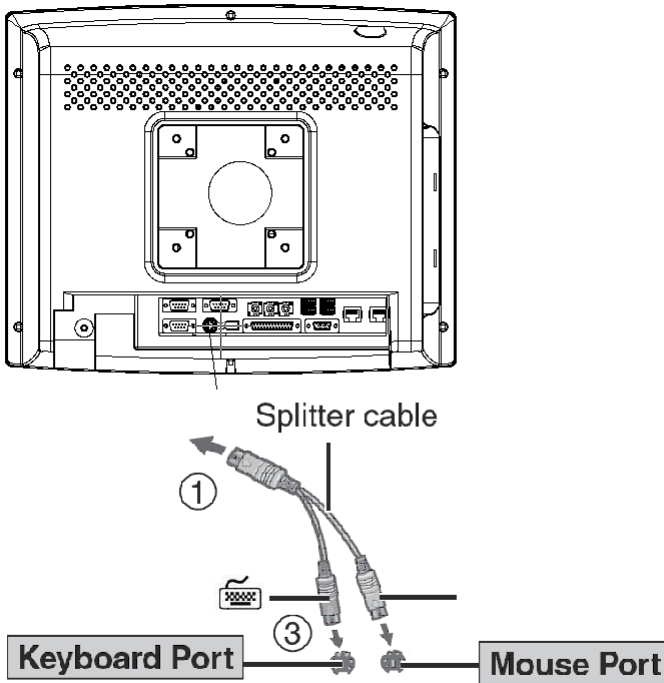
1. Connect the female end of the power cord to the AC inlet of the panel PC. (See Figure 2-5.)
2. Connect the 3-pin male plug of the power cord to an electrical outlet.



***Figure 2.4: Connecting the power cord***

## 2.2.2 Connecting the keyboard and mouse

1. Connect the Y-shaped adapter to the PS/2 mouse and keyboard port on the I/O section of the POC-155. (See Figure 2-6.)
2. Connect the PS/2 mouse and keyboard to the Y-shaped adapter.  
If you use a serial mouse, you can connect the mouse to any COM port in the I/O section.



*Figure 2.5: Connecting the mouse and keyboard*

## 2.2.3 Switching on the power

Switch on the power switch on the rear cover.



## 2.3 Running the BIOS Setup Program

---

Your POC-155 is likely to have been properly set up and configured by your dealer prior to delivery. You may still find it necessary to use the BIOS (Basic Input-Output System) setup program to change system configuration information, such as the current date and time or your type of hard drive. The setup program is stored in read-only memory. It can be accessed either when you turn on or reset the panel PC, by pressing the “Ctrl+Alt+Del.” keys on your keyboard immediately after powering on the computer.

The settings you specify with the setup program are recorded in a special area of memory called CMOS RAM. This memory is backed up by a battery so that it will not be erased when you turn off or reset the system. Whenever you turn on the power, the system reads the settings stored in CMOS RAM and compares them to the equipment check conducted during the power on self-test (POST). If an error occurs, an error message will be displayed on screen, and you will be prompted to run the setup program.

## 2.4 Installing System Software

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Recent releases of operating systems from major vendors include setup programs which load automatically and guide you through hard disk preparation and operating system installation. The guidelines below will help you determine the steps necessary to install your operating system on the panel PC hard drive.

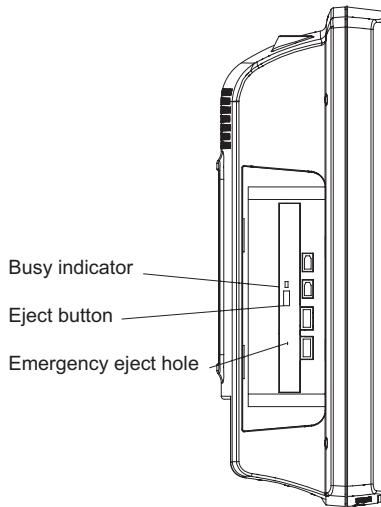
<b>Note</b>	<i>Some distributors and system integrators may have already pre-installed system software prior to shipment of your panel PC.</i>
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If required, insert your operating system's installation or setup diskette into the optical drive until the release button pops out. (See Figure 2-14)

The BIOS supports system boot-up directly from the CD-ROM drive. You may also insert your system installation CD-ROM disk into the CD-ROM drive.

Power on or reset the system by pressing the “Ctrl+Alt+Del” keys simultaneously. The Point of Care Terminal will automatically load the operating system from the diskette or CD-ROM.

If you are presented with the opening screen of a setup or installation program, follow the instructions on screen. The setup program will guide you through preparation of your hard drive, and installation of the operating system.



*Figure 2.6: Insert the disk to CD-ROM drive*

## 2.5 Installing the Drivers

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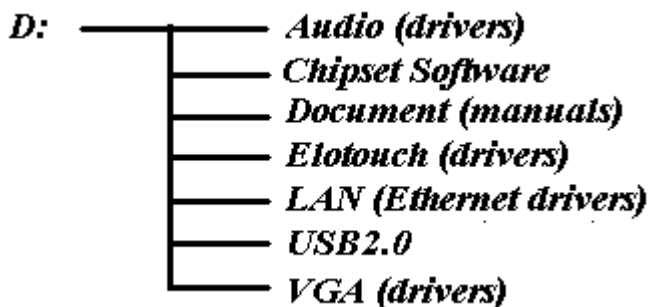
After installing your system software, you will be able to set up the Ethernet, SVGA, audio and touchscreen functions. All the drivers except the CD-ROM drive driver are stored in a CD-ROM disc entitled “Drivers and Utilities which can be found in your accessory box.

The standard procedures for installing the SVGA, audio, touchscreen, and Ethernet drivers are described in Chapters 3, 4, 5, and 6 respectively.

The utility directory includes multimedia programs. Refer to the README.TXT file inside the VGA folders for more detailed information.

The various drivers and utilities in the CD-ROM disc have their own text files which help users install the drivers and understand their functions. These files are a very useful supplement to the information in this manual.

For your reference, the directory of drivers on the “Drivers and Utilities” CD-ROM is:



*Figure 2.7: The file directory on “Drivers and Utilities” CD-ROM*

Note	<i>The drivers and utilities used for the POC-155 panel PCs are subject to change without notice. If in doubt, check Advantech's website or contact our application engineers for the latest information regarding drivers and utilities.</i>
------	---



## **Graphic Chipset Setup**

This chapter gives details of graphics chipset setup.

Sections include:

- Introduction
- Installation of Graphic Driver
- Further information

# Chapter 3 Graphic Chipset Setup

## 3.1 Introduction

---

The POC-155 has an onboard VGA interface. The specifications and features are described as follows:

### 3.1.1 Chipset

The POC-155 uses Mobile Intel® 915GM Express chipset for its graphic controller. It supports SDVO device, and CRT monitors. The Mobile Intel® 915GM Express chipset is a component of the Intel® Centrino® mobile technology. Featuring the Intel® Graphics Media Accelerator 900, the 915GM chipset enables twice the graphics performance of the previous generation of platforms based on the Intel® 855GME chipset.

### 3.1.2 Display memory

Maximum memory allocation is based on the total system memory. 1 MB or 8 MB of pre-allocated memory is supported.

### 3.1.3 LVDS Transmitter

The POC-155 uses Chrontel CH7308A for driving its LCD panel. The CH7308A is a display controller device, which accepts digital graphics input signals, upscales, encodes, and transmits data through an LVDS transmitter to an LCD panel. The CH7308A operates at pixel rates of up to 140 MHz, and support 18/24-bit LCD panels.

### 3.1.4 Display types

CRT and panel displays can be used simultaneously. The POC-155 can be set in one of three configurations: CRT only, LVDS only, both CRT and LFP (LVDS). The system is initially set to simultaneous display mode—CRT and LFP (BIOS default setting).

The analog CRT DAC interface supports maximum DAC frequency up to 400 MHz, 24-bit RAMDAC, DDC2B compliant, and resolution up to 2048 x 1536.

## 3.2 Installation of Graphic Driver

---

Complete the following steps to install the SVGA driver. Follow the procedures in the flow chart that apply to the operating system that you are using within your POC-155.

<i>Important</i>	<i>The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.</i>
------------------	--

<i>Note1</i>	<i>The CD-ROM drive is designated as “D” throughout this chapter.</i>
--------------	---

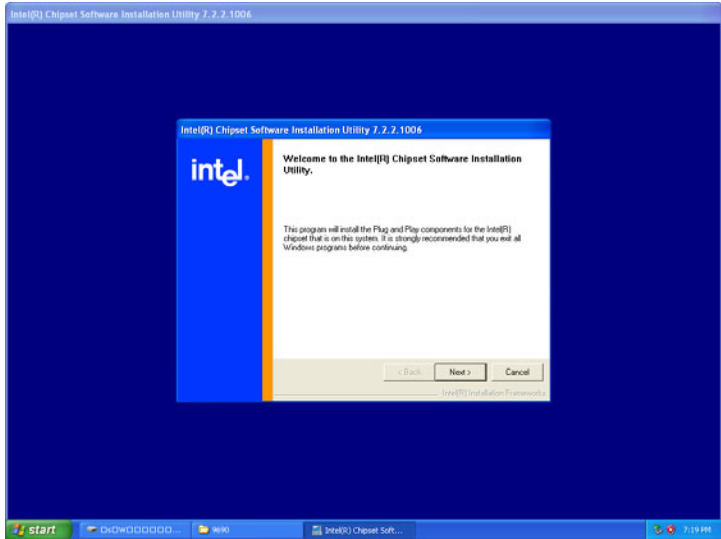
<i>Note2</i>	<i>&lt;Enter&gt; means pressing the “Enter” key on the keyboard.</i>
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<i>Note3</i>	<i>Before you install the graphic driver of POC-155, please ensure you have installed the “Intel Chipset Software Installation Utility”. You can find this driver in the Utility CD-ROM.</i>
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<i>Note4</i>	<i>The resolution of window display will be fixed at 640 x 480 before you install VGA driver. Depend on your LCD native resolution, the black area might be different.</i>
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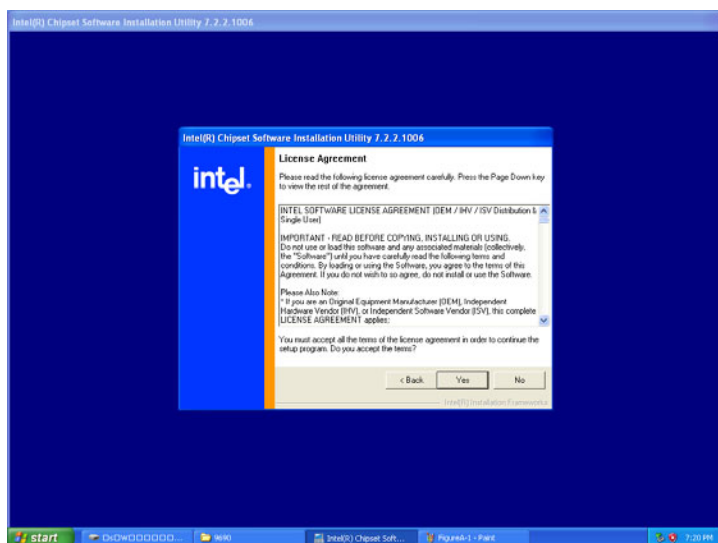
### 3.2.1 Installation for Windows XP

1. Click the 'Start' button in the task bar, click 'Run' and then select 'infnst\_autol.exe' from the drive directory “D:/Chipsetsoftware/” where the driver files are stored. The Install dialog will appear.
2. Click 'Next' to continue.

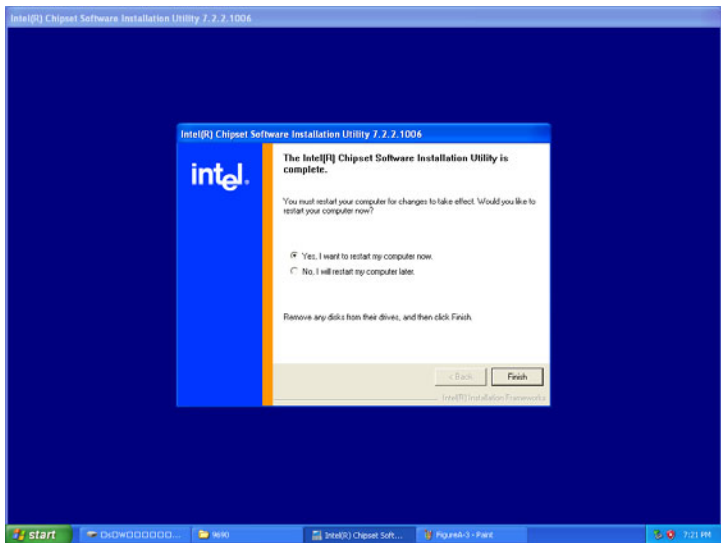
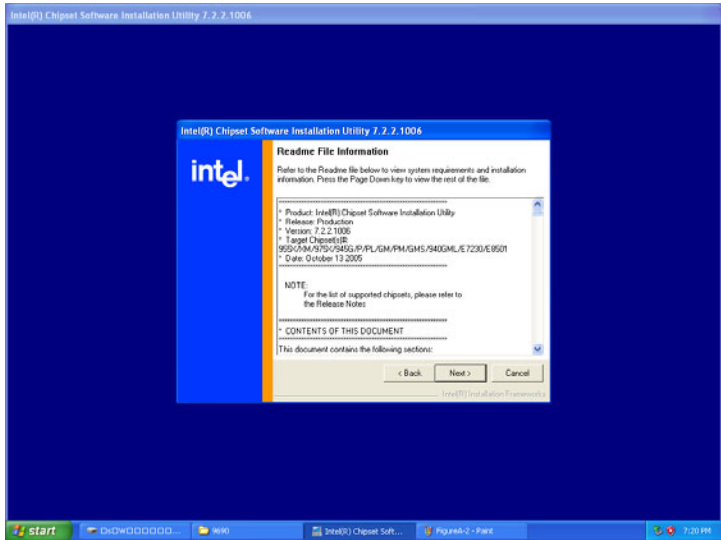




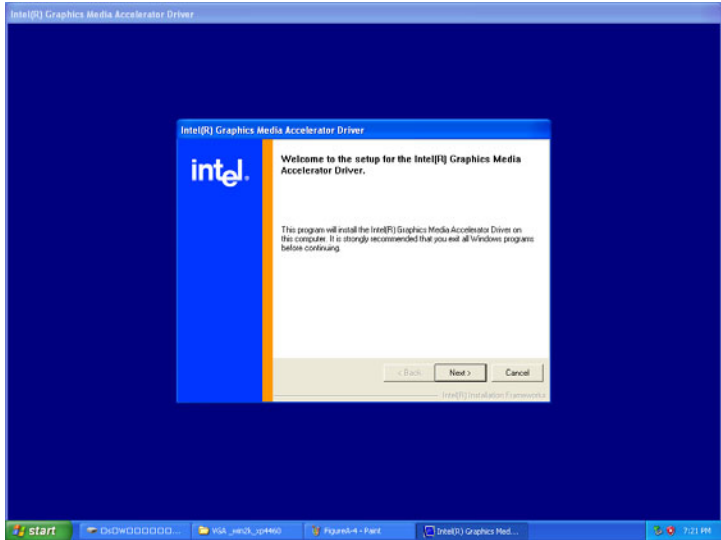
3. Read the License Agreement and click 'Yes' to proceed.



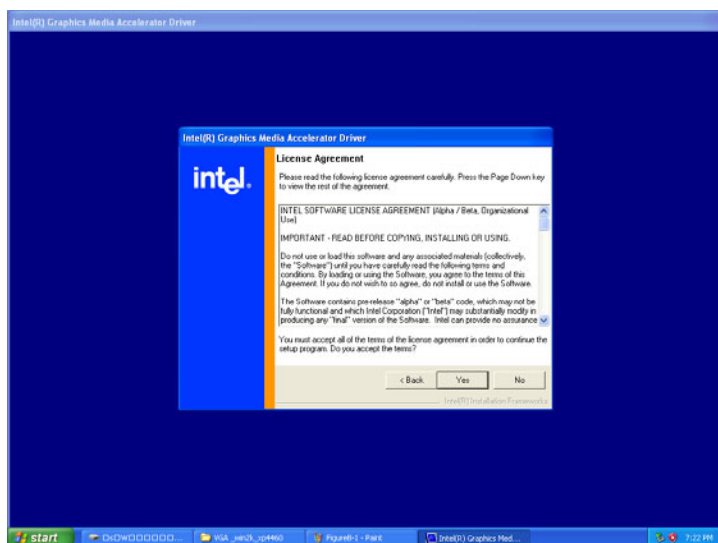
4. When the 'Setup COMPLETE' message appears click 'Finish' to restart your computer.



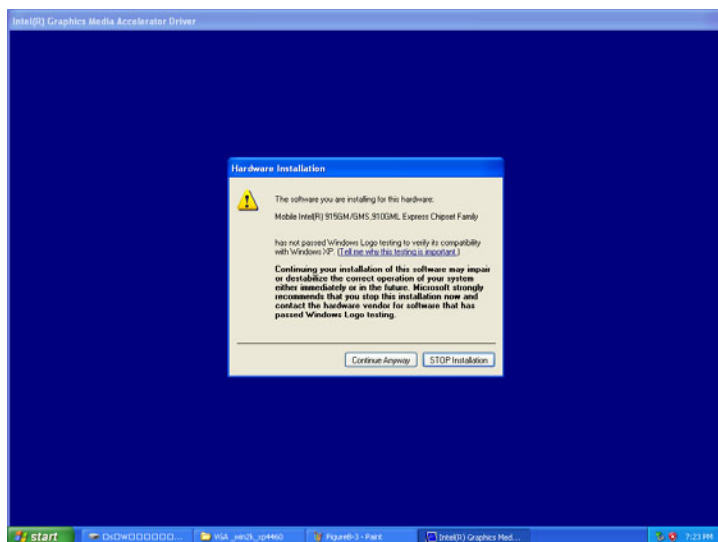
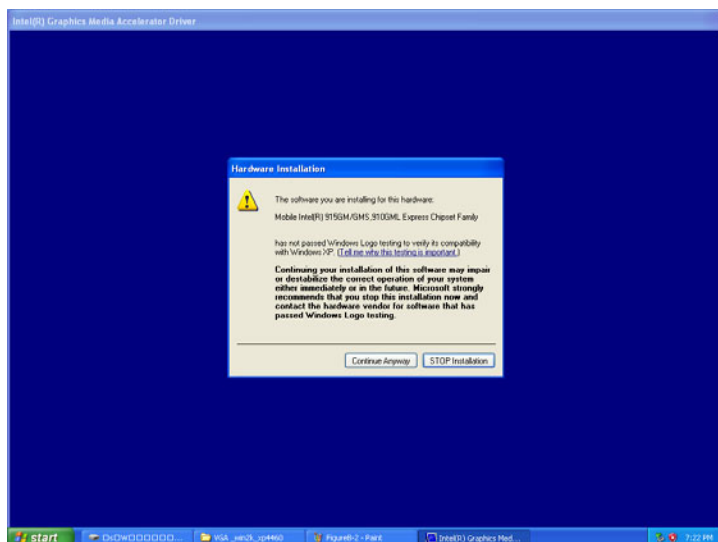
1. Click the 'Start' button in the task bar, click 'Run' and then select 'Setup.exe' from the drive directory "D:/VGA/" where the driver files are stored. The Install dialog will appear.
2. Click 'Next' to continue.

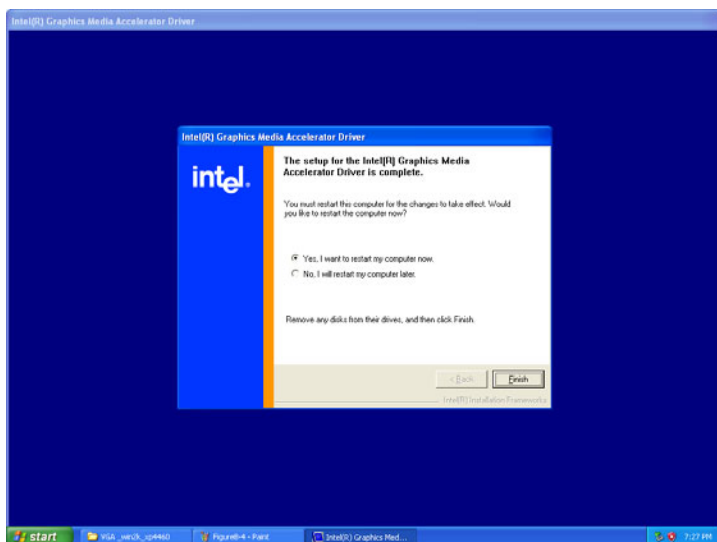


3. Read the License Agreement and click 'Yes' to proceed.



4. When the 'Setup COMPLETE' message appears click 'Finish' to restart your computer.





### 3.3 Further information

---

For further information about the VGA installation in your POC-155, included driver updates, troubleshooting guides and FAQ lists please visit the following web resources.

Intel website: [www.intel.com.tw](http://www.intel.com.tw)

Advantech websites: [www.advantech.com](http://www.advantech.com)  
[www.advantech.com.tw](http://www.advantech.com.tw)

## **Audio Interface**

This chapter gives details of audio interface setup.

Sections include:

- Introduction
- Installation of Audio Driver
- Further information

# Chapter 4 Audio Interface

## 4.1 Introduction

---

The POC-155's onboard audio interface provides high-quality stereo sound and FM music synthesis (ESFM) by using the ALC202 audio controller from Realtek. The audio interface can record, compress, and play back voice, sound, and music with a built-in mixer control. The POC-155's onboard audio interface also supports the Plug and Play (PnP) standard and provides PnP configuration for audio, FM, and MPU-104 logical devices. It is compatible with Sound Blaster, Sound Blaster Pro version 3.01, voice, and music functions. The ESFM synthesizer is register compatible with the OPL3 and has extended capabilities.

## 4.2 Installation of Audio Driver

---

Before installing the audio driver, please take note of the procedures detailed below. You must know which operating system you are using in your POC-155, and then refer to the corresponding installation flow chart. Just follow the steps in the flow chart. You can quickly and successfully complete the installation, even though you are not familiar with instructions for Windows.

<i>Important</i>	<i>The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.</i>
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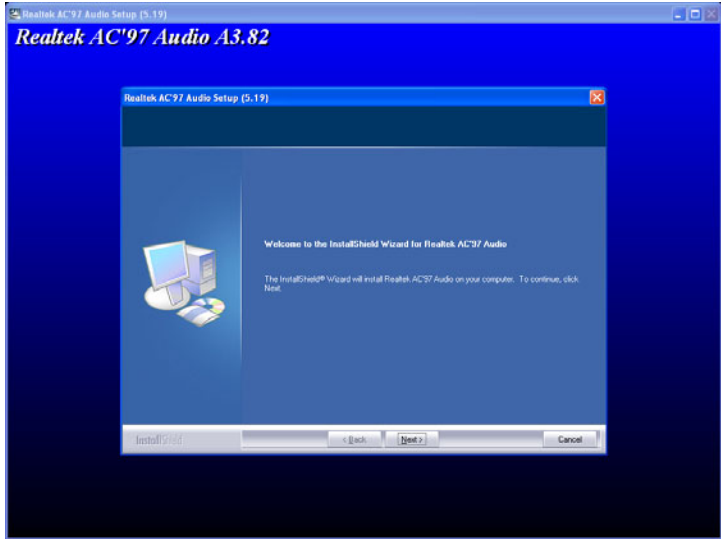
<i>Note1</i>	<i>The CD-ROM drive is designated as "D" throughout this chapter.</i>
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<i>Note2</i>	<i>&lt;Enter&gt; means pressing the "Enter" key on the keyboard.</i>
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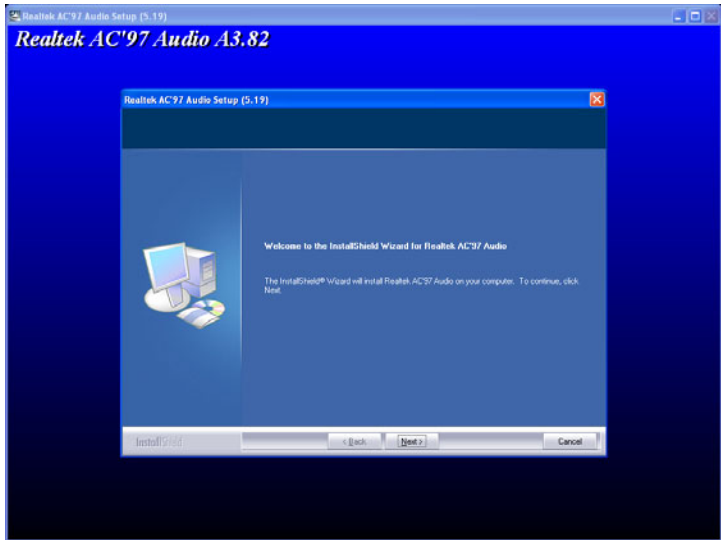


## 4.2.1 Installation for Windows 2000/XP

1. Click the 'Start' button in the task bar, click 'Run' and then select 'infnst\_autol.exe' from the drive directory “D:/Audio/” where the driver files are stored. The Install dialog will appear.
2. Click 'Next' to continue.



3. Click 'Next' to continue.



4. When the 'Setup COMPLETE' message appears click 'Finish' to restart your computer.

## 4.3 Further information

---

For further information about the audio interface installation in your POC-155, included driver updates, troubleshooting guides and FAQ lists please visit the following web resources.

Realtek website: [www.realtek.com.tw](http://www.realtek.com.tw)

Advantech websites: [www.advantech.com](http://www.advantech.com)  
[www.advantech.com.tw](http://www.advantech.com.tw)

## **Touchscreen Interface**

This chapter gives details of touchscreen interface setup.

Sections include:

- Introduction
- Installation of Touchscreen Drivers
- Further information

# Chapter 5 Touchscreen Interface

## 5.1 Introduction

---

### 5.1.1 General Information

The POC-155's optional touchscreen incorporates advanced second-generation 5-wire resistive technology. They allow 75% light transmission. The resistive and capacitive models have an antiglare surface. All models provide greatly enhanced visual resolution. They also have new improved scratch-resistant features.

The touchscreen is manufactured from UL-recognized components. When properly installed, the touchscreen's ball impact resistance meets the UL 1950 standard. Its fire resistance meets the UL-746C, 19 mm (0.75") flame test standard. Systems incorporating the touchscreen, controllers, and cables have been approved to FCC Class A and Class B standards.

### 5.1.2 General specifications

Please refer to Chapter 1, Section 1.2 of this manual.

### 5.1.3 Environmental specifications

- Temperature:
  - -0 ~ 40° C (operating)
  - -20 ~ 60° C (storage)
- Relative humidity:
  - 90 RH at 35° C (operating)
  - 90 RH at 35° C for 240 hours, non-condensing (storage)
- **Chemical resistance:** The active area of the touchscreen is resistant to the following chemicals when exposed for a period of one hour at a temperature of 21° C (71° F):
  - Acetone
  - Methylene chloride
  - Methyl ethyl ketone
  - Isopropyl alcohol
  - Hexane
  - Ammonia-based glass cleaners
  - Turpentine

- Mineral spirits
- Foods and beverages

## 5.2 Installation of Touchscreen Drivers

---

To facilitate installation of the touchscreen driver, you should read the instructions in this section carefully before you attempt installation.

<i>Important</i>	<i>The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.</i>
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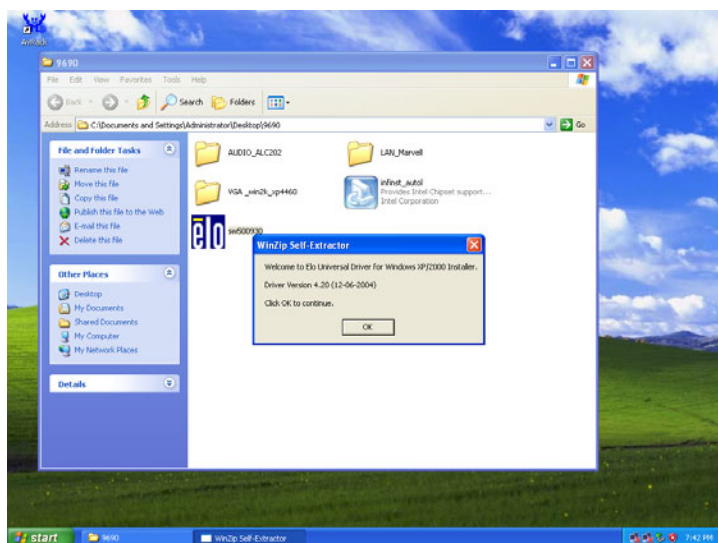
<i>Note1</i>	<i>The CD-ROM drive is designated as “D” throughout this chapter.</i>
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<i>Note2</i>	<i>&lt;Enter&gt; means pressing the “Enter” key on the keyboard.</i>
--------------	--

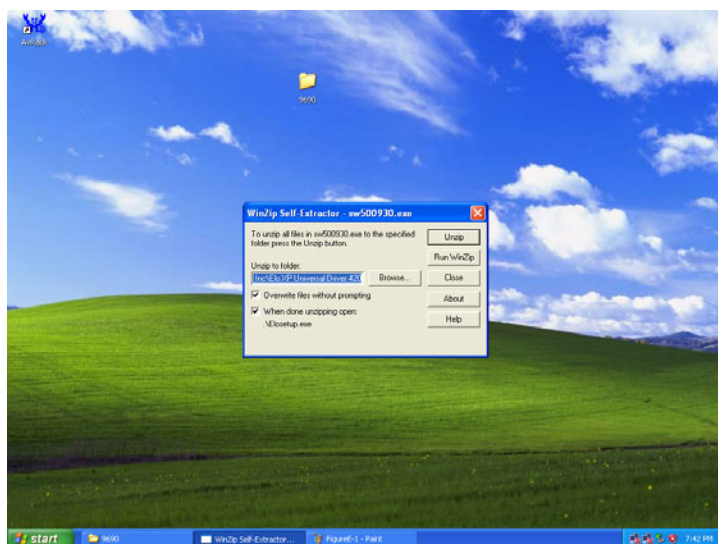
### 5.2.1 Installation for Windows XP

1. Click the 'Start' button in the task bar, click 'Run' and then select 'sw500930.exe' from the drive directory “D:/Elotouch/” where the driver files are stored. The Install dialog will appear.

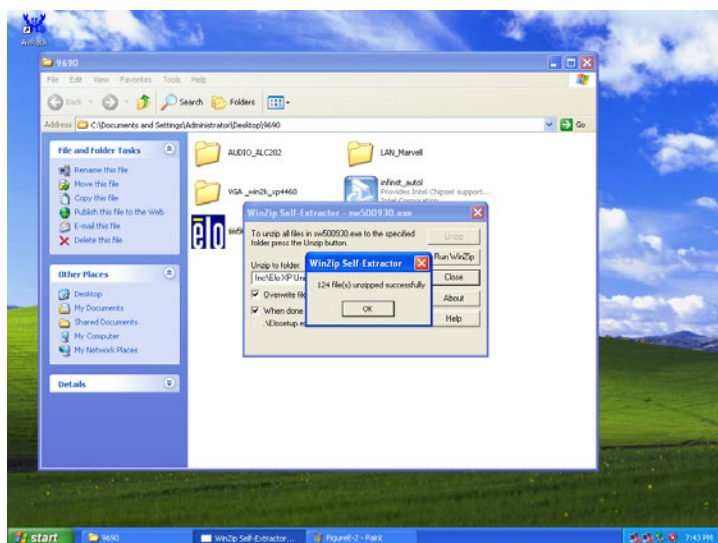
2. Click 'Ok' to continue.



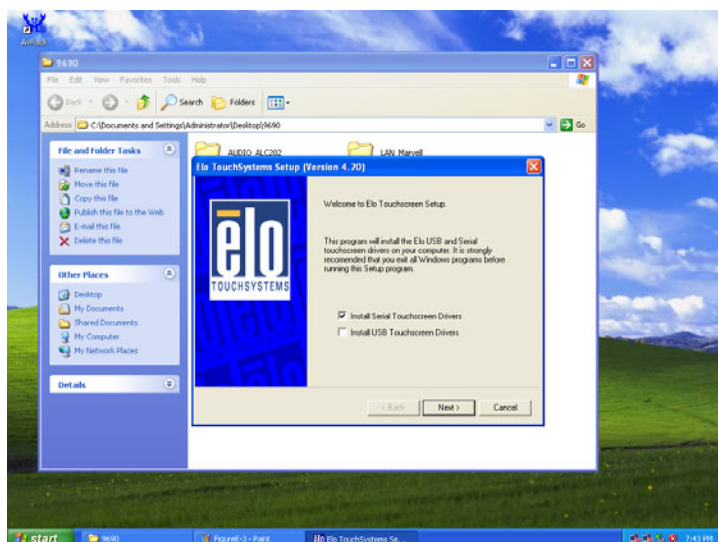
3. Click 'Unzip' to continue.



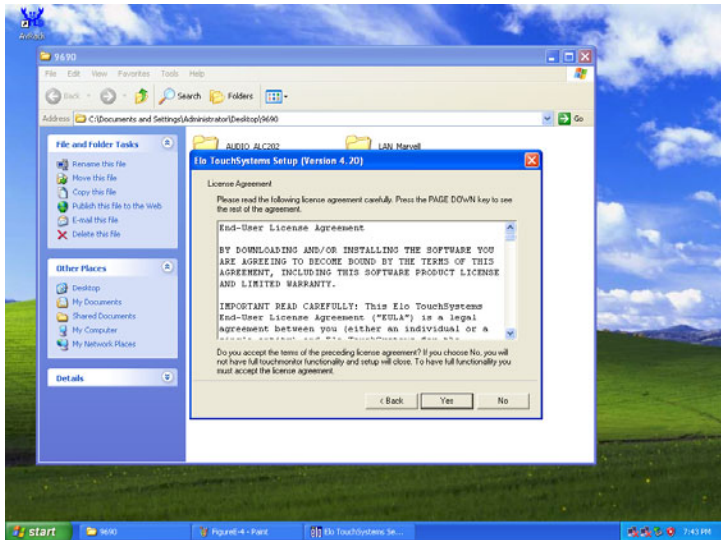
4. Click 'Ok' to continue.



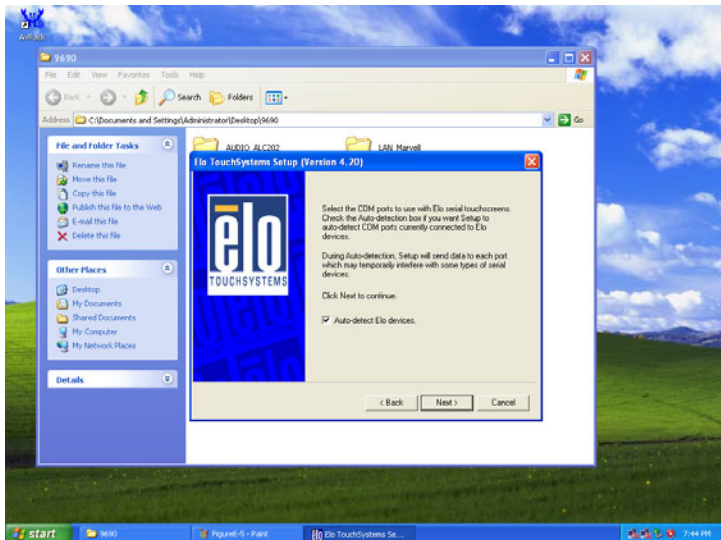
5. Click 'Next' to continue.



6. Read the License Agreement and click 'Yes' to proceed.

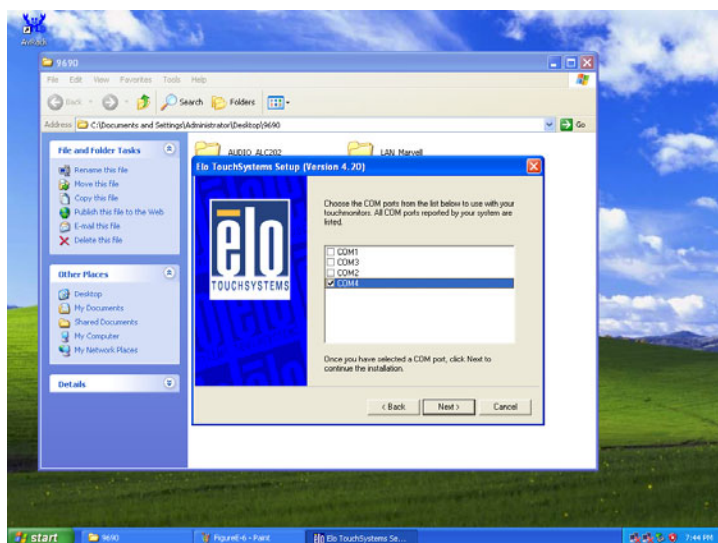


7. Click 'Next' to continue.

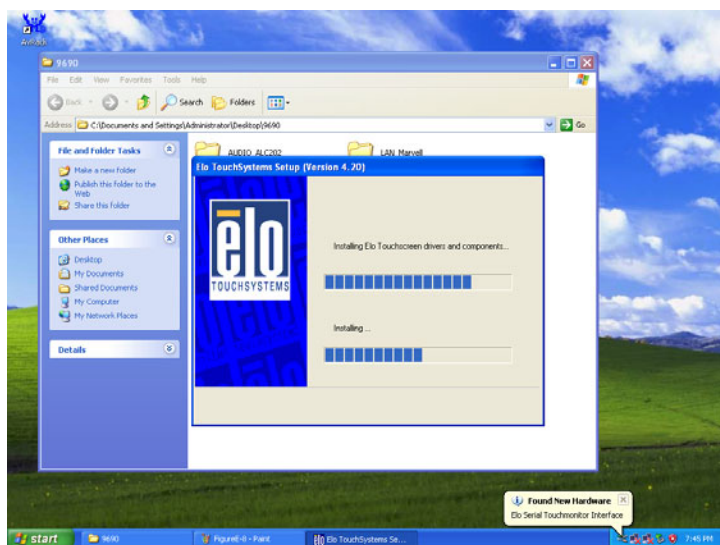
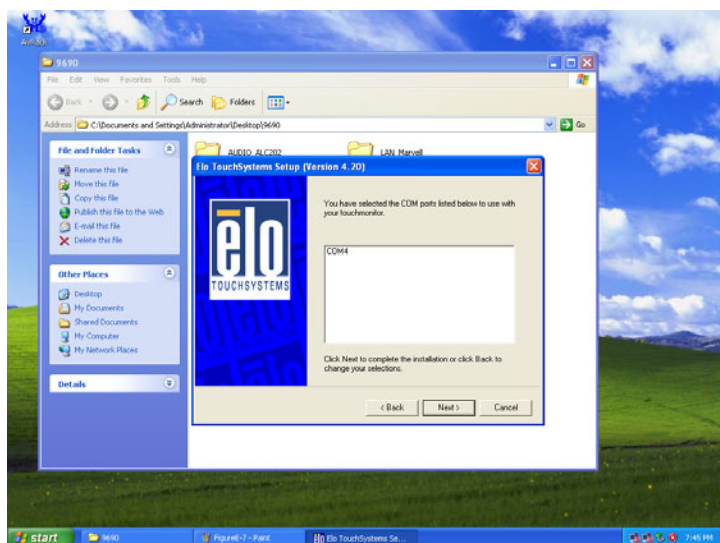




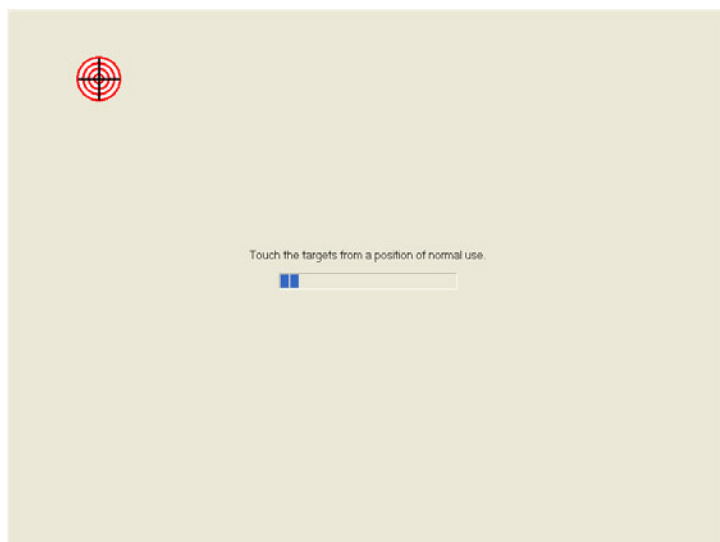
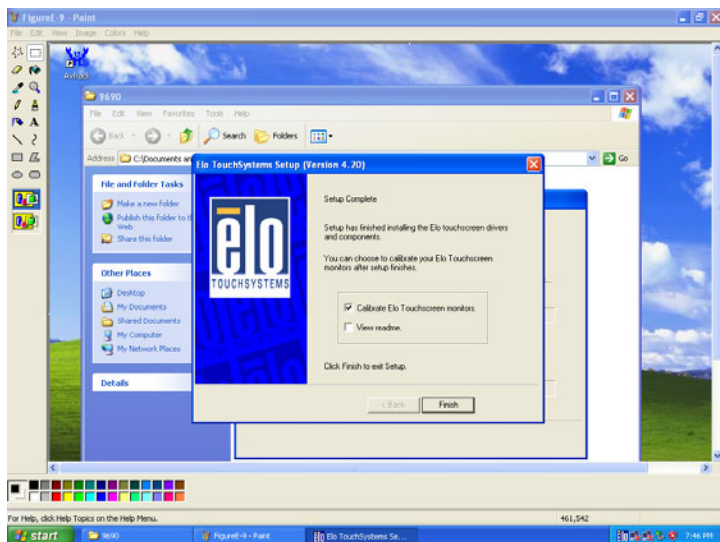
8. Click 'Next' to continue.



9. Click 'Next' to continue.



10. When the 'Setup COMPLETE' message appears click 'Finish'. And follow up the on-screen instructions to complete touchscreen calibration procedures.



## 5.3 Further information

---

For further information about the Touchscreen installation in your POC-155, included driver updates, troubleshooting guides and FAQ lists please visit the following web resources.

Elo website: [www.elotouch.com](http://www.elotouch.com)

Advantech websites: [www.advantech.com](http://www.advantech.com)  
[www.advantech.com.tw](http://www.advantech.com.tw)

## **PCI Express Ethernet Interface**

This chapter gives details of Ethernet interface setup.

Sections include:

- Introduction
- Installation of Ethernet Driver
- Further information

# Chapter 6 PCI Express Ethernet Interface

## 6.1 Introduction

---

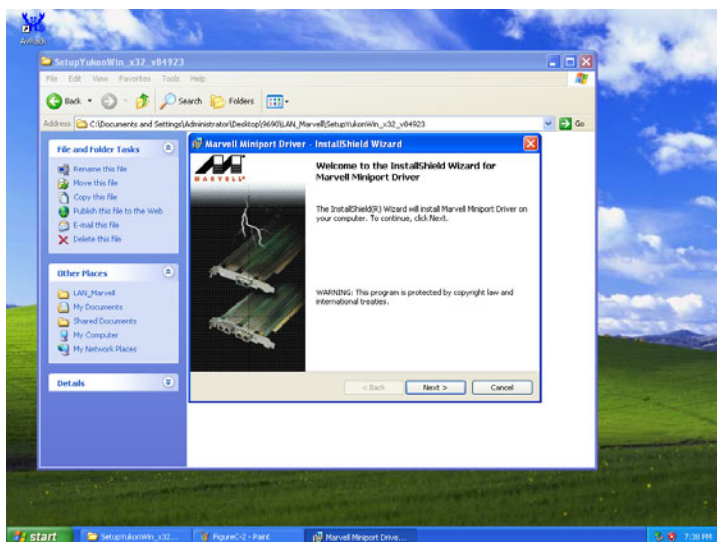
The POC-155 is equipped with a high performance Marvell 88E805 PCIe Ethernet chipset 3 which is fully compliant with IEEE 802.3 10/100/1000 Mbps standards. The Ethernet port provides a standard RJ-45 jack.

## 6.2 Installation of Ethernet Driver

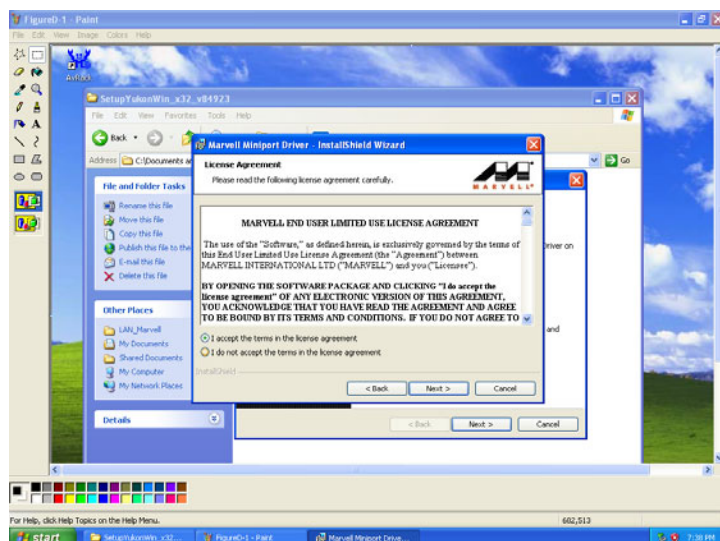
---

### 6.2.1 Installation for Windows XP

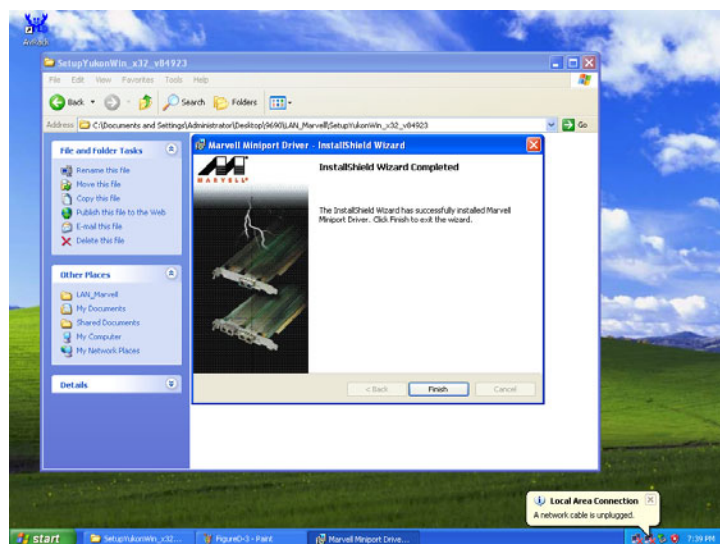
1. Click the 'Start' button in the task bar, click 'Run' and then select 'SetupYukonWin.exe' from the drive directory “D:/LAN\_Marvell/” where the driver files are stored. The Install dialog will appear.
2. Click 'Next' to continue.



3. Click 'Next' to continue.



4. When the 'Setup COMPLETE' message appears click 'Finish' to restart your computer.



## 6.3 Further information

---

For further information about the Ethernet installation in your POC-155, included driver updates, troubleshooting guides and FAQ lists please visit the following web resources.

Marvell website: [www.marvell.com](http://www.marvell.com)

Advantech websites: [www.advantech.com](http://www.advantech.com)  
[www.advantech.com.tw](http://www.advantech.com.tw)



## Connector Pinouts

This appendix gives details of connector pinouts.

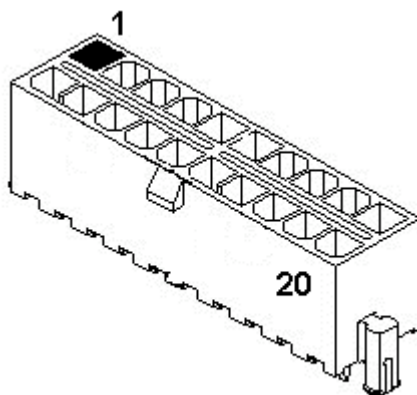
Sections include:

- ATX Power Connector
- Inverter Power Connector
- Internal Speaker Connector
- Front Panel Control Connector (\*Reserved)
- IR Connector (\*Reserved)
- EIDE Hard Disk Drive Connector- (Secondary Master)
- CD-ROM Connector (Primary Master)
- CPU Fan Power Connector
- System Fan Power Connector
- PCI Bus Expansion Connector (PCI1)
- CPU Selection Switches
- COM2
- Locating Connectors

# Appendix A Connector Pinouts

## A.1 ATX Power Connector

---



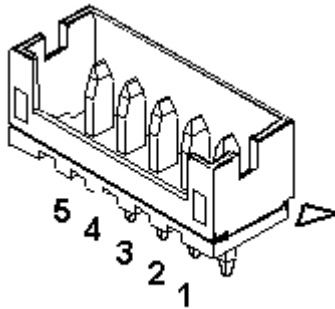
*Figure A.1: POC-155 ATX power connector*

*Table A.1: ATX power connector (CN37)*

Pin No.	Signal Description
1	3.3V
2	3.3V
3	GND
4	5V
5	GND
6	5V
7	GND
8	POK
9	5 VSB
10	12 V
11	3.3V
12	-12V
13	GND
14	PSON

15	GND
16	GND
17	GND
18	-5V
19	5V
20	5V

## A.2 Inverter Power Connector



*Figure A.2: POC-155 Inverter power connector*

*Table A.2: Inverter power connector (CN3)*

Pin No.	Signal Description
1	+12 V
2	GND
3	ENABLE
4	Brightness Adjustment
5	+5V

### A.3 Internal Speaker Connector

---

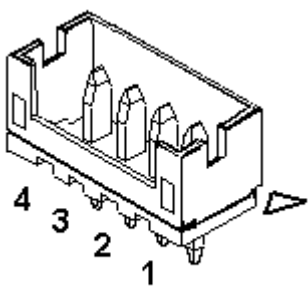


Figure A.3:

Table A.3: POC-155 Internal speaker connector(CN26)

Pin No.	Signal Description
1	Speaker out_R-
2	Speaker out_R+
3	Speaker out_L+
4	Speaker out_L-

### A.4 Front Panel Control Connector (\*Reserved)

---

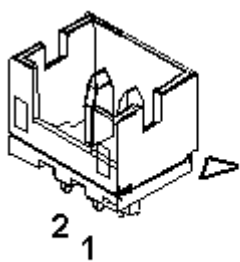


Figure A.4: POC-155 Flat panel control connector

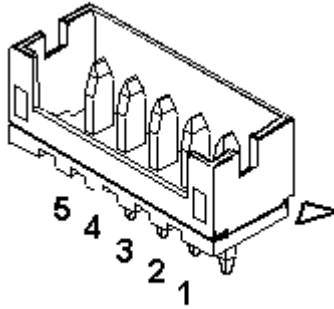
**Table A.4: Power connector (J4)**

Pin No.	Signal Description
1	Power SW+
2	Power SW-

**Table A.5: Reset connector (J3)**

Pin No.	Signal Description
1	RESET SW
2	GND

## **A.5 IR Connector (\*Reserved)**



**Figure A.5: POC-155 IR connector**

**Table A.6: IR connector (CN12)**

Pin No.	Signal Description
1	Vcc
2	NC
3	IR_IN
4	GND
5	IR_OUT

## A.6 EIDE Hard Disk Drive Connector (Primary/Master)

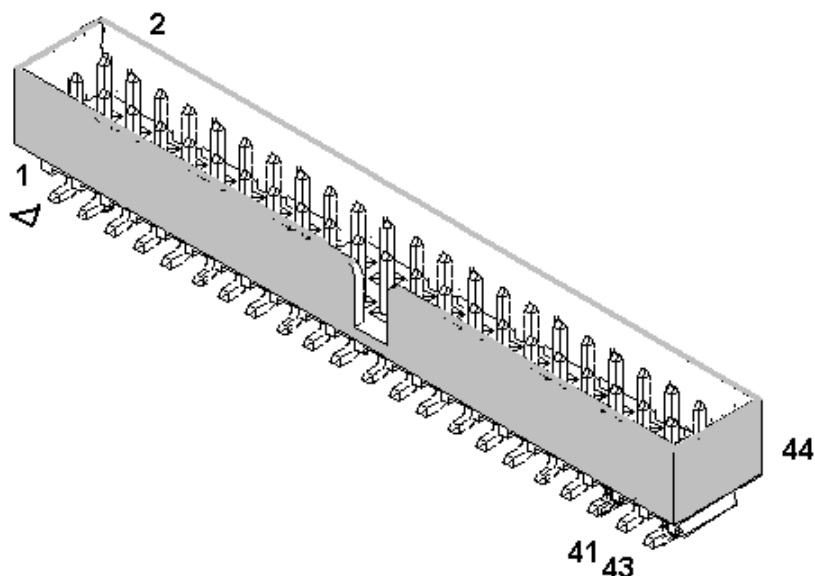


Figure A.6: POC-155 EIDE hard drive connector

Table A.7: EIDE hard disk connector (CN10)

Pin No.	Signal Description
1	IDE RESET#
2	GND
3	DATA7
4	DATA8
5	DATA6
6	DATA9
7	DATA5
8	DATA10
9	DATA4
10	DATA11
11	DATA3
12	DATA12
13	DATA2

14	DATA13
15	DATA1
16	DATA14
17	DATA0
18	DATA15
19	SIGNAL GND
20	NC
21	HDD DREQ
22	GND
23	IO WRITE
24	GND
25	IO READ
26	GND
27	HD READY
28	CABLE SELECT
29	HD ACK0#
30	GND
31	IRQ14
32	NC
33	ADDR1
34	NC
35	ADDR0
36	ADDR2
37	HDD SELECT 0#
38	HDD SELECT 1#
39	IDE ACTIVE 0#
40	GND
41	Vcc
42	Vcc
43	GND
44	NC

# Low active

## A.7 CD-ROM Connector (Primary/Slave)

---

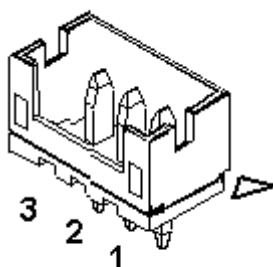
*Table A.8: CD-ROM connector (CN7)*

Pin No.	Signal Description
1	Audio_L
2	Audio_R
3	GND
4	GND
5	IDE RESET #
6	DATA8
7	DATA7
8	DATA9
9	DATA6
10	DATA10
11	DATA5
12	DATA11
13	DATA4
14	DATA12
15	DATA3
16	DATA13
17	DATA2
18	DATA14
19	DATA1
20	DATA15
21	DATA0
22	HDD DREQ
23	GND
24	IO READ
25	IO WRITE
26	GND
27	HD READY
28	HD ACK0#
29	IRQ15
30	NC
31	ADDR1
32	NC
33	ADDR0



34	ADDR2
35	HDD SELECT 0#
36	HDD SELECT 1#
37	Vcc (+5V)
38	Vcc (+5V)
39	GND
40	GND

## A.8 CPU Fan Power Connector



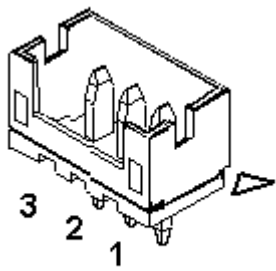
*Figure A.7: POC-155 CPU fan connector*

*Table A.9: CPU fan power connector (CN19)*

Pin No.	Signal Description
1	FAN_DET
2	+12V
3	GND

## A.9 System Fan Power Connector

---



*Figure A.8: POC-155 System fan connector*

*Table A.10: System fan power connector (CN39)*

Pin No.	Signal Description
1	FAN_DET
2	+12V
3	GND

## A.10 PCI Bus Expansion Connector (PCI1)

---



*Figure A.9: POC-155 PCI slot connector*

Note	<i>This PCI slot uses standard PCI Bus V2.2. If you wish to use this slot, you can connect the add-on cards directly without any issues.</i>
------	--

# A.11 CPU Selection Switches

---

*Table A.11: CPU Selection Switch SW1*

Pin No.	Dothan (Default)	Banias 533	Banias 400
1	OFF	ON	ON
2	ON	OFF	OFF
3	ON	ON	ON
4	OFF	OFF	OFF
5	OFF	ON	ON
6	ON	OFF	OFF

*Table A.12: CPU Selection Switch SW2*

Pin No.	Dothan (Default)	Banias 533	Banias 400
1	OFF	ON	OFF
2	ON	OFF	OFF
3	OFF	OFF	ON
4	ON	ON	OFF

# A.12 COM2

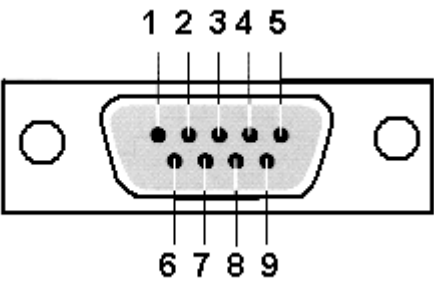
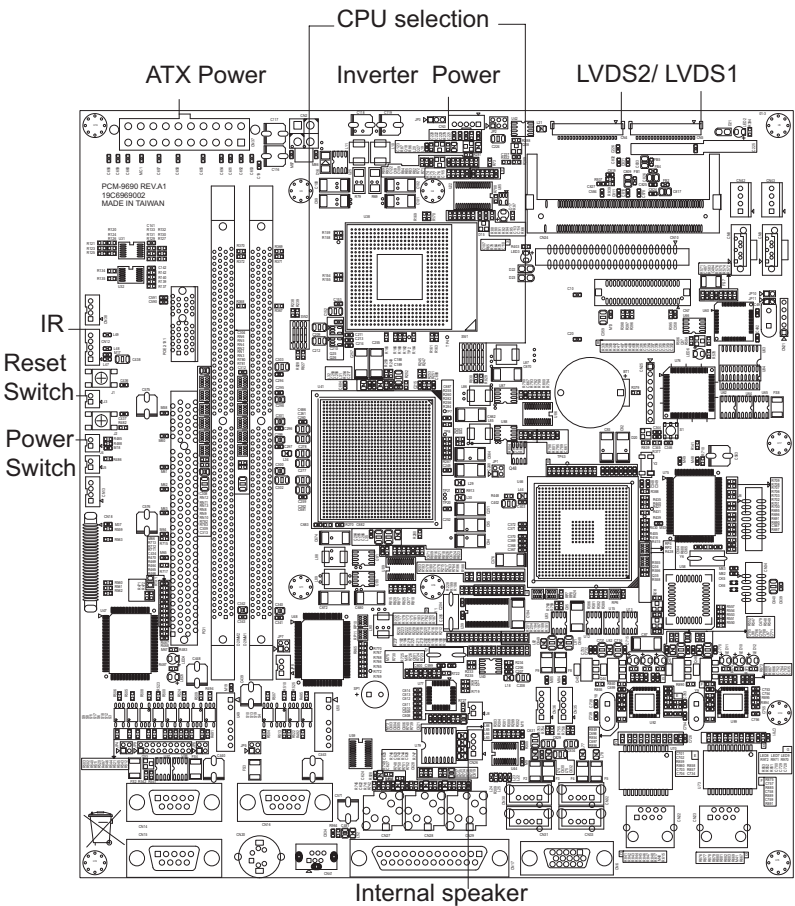


Figure A.10: POC-155 COM2 connector

Table A.13: COM2 pin assignment

Configure	Signal Description		
	RS-232	RS-422	RS-485
Pin No.			
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	--
4	DTR	RX-	--
5	GND	GND	--
6	DSR	--	--
7	RTS	--	--
8	CTS	--	--
9	RI	--	--

# A.13 Locating Connectors



*Figure A.11: Locating connectors on the POC-155 motherboard*



## **Jumper Setting and Connectors**

This appendix describes jumper settings.

Sections include:

- Jumpers and connectors
- CPU Configuration
- COM port Interface
- Watchdog Timer Configuration

# Appendix B Jumper Setting and Connectors

## B.1 Jumpers and connectors

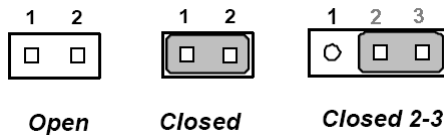
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### B.1.1 Setting jumpers

You can configure your Point of Care Terminal to match the needs of your application by setting jumpers. A jumper is the simplest kind of electrical switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or pins 2 and 3.

The jumper settings are schematically depicted in this manual as follows:



*Figure B.1: Jumper Setting*

A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

### B.1.2 Jumpers and switches

The motherboard of the Point of Care Terminal has a number of jumpers that allow you to configure your system to suit your applications.

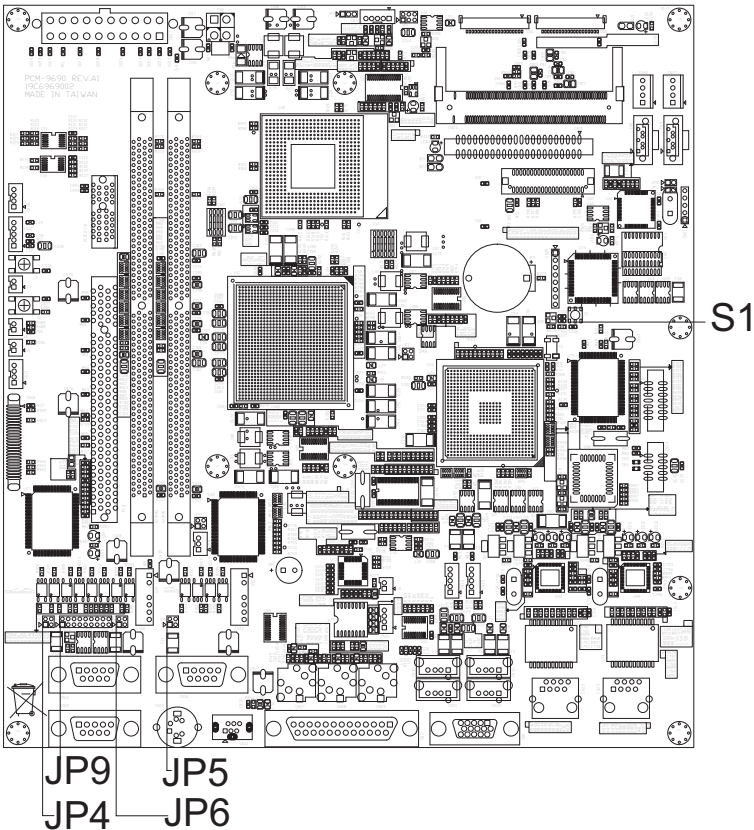
The table below lists the function of each of the board’s jumpers.



**Table B.1: Jumpers and their functions**

Label	Function Description
JP9	Isolated COM2 RS-232/422/485 setting
S1	CMOS clear for external RTC
JP4	COM1 Pin9 output type setting
JP5	COM3 Pin9 output type setting
JP6	COM2 Pin9 output type setting

### B.1.3 Locating jumpers



**Figure B.2: Locating jumpers on the POC-155 motherboard**

## B.2 CPU Configuration

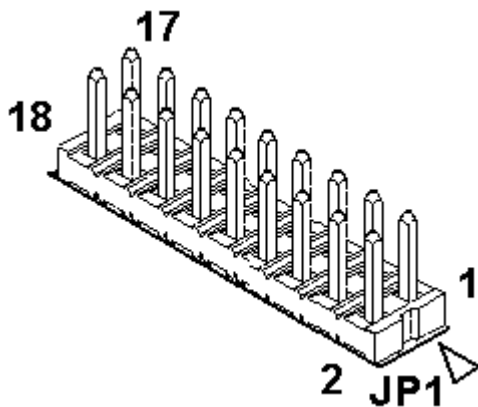
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You can install an Intel® Pentium® Mobile or Celeron™ Mobile CPU. See Appendix C for detailed information.

## B.3 COM port Interface

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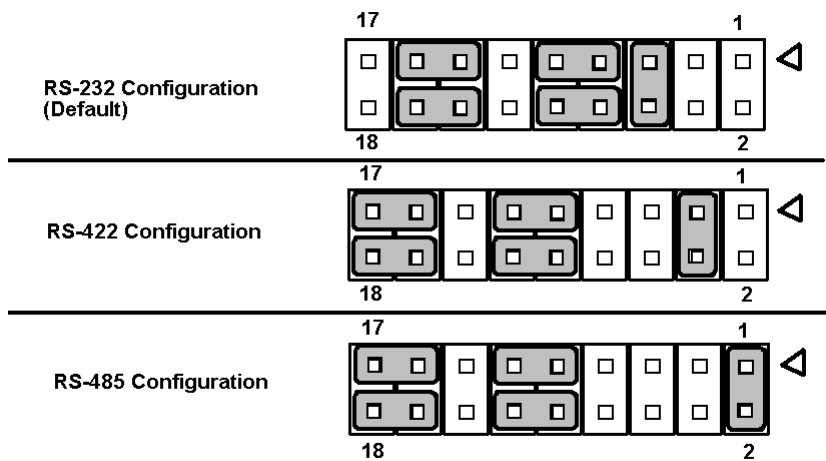
The Point of Care Terminal provides three serial ports (COM1/COM3: RS-232; COM2: RS-232/422/485 optional in one COM port connector).



*Figure B.3: COM port jumper*

### B.3.1 COM2 Output Type Setting (JP9)

COM2 can be configured to operate in RS-232, RS-422, or RS-485 mode. This is done via JP9. JP9 is the 18 pins jumper close to the COM Port Connector.



*Figure B.4: COM2 port configuration*

*Table B.2: COM2 Port Configuration (JP9)*

Pin No.	Open/Closed	Function Description
Pin5,6 Pin7,9 Pin8,10 Pin13,15 Pin14,16	Closed	COM2 is RS-232 port (Default)
Pin3,4 Pin9,11 Pin10,12 Pin15,17 Pin16,18	Closed	COM2 is RS-422 port
Pin1,2 Pin9,11 Pn10,12 Pin15,17 Pin16,18	Closed	COM2 is RS-485 port

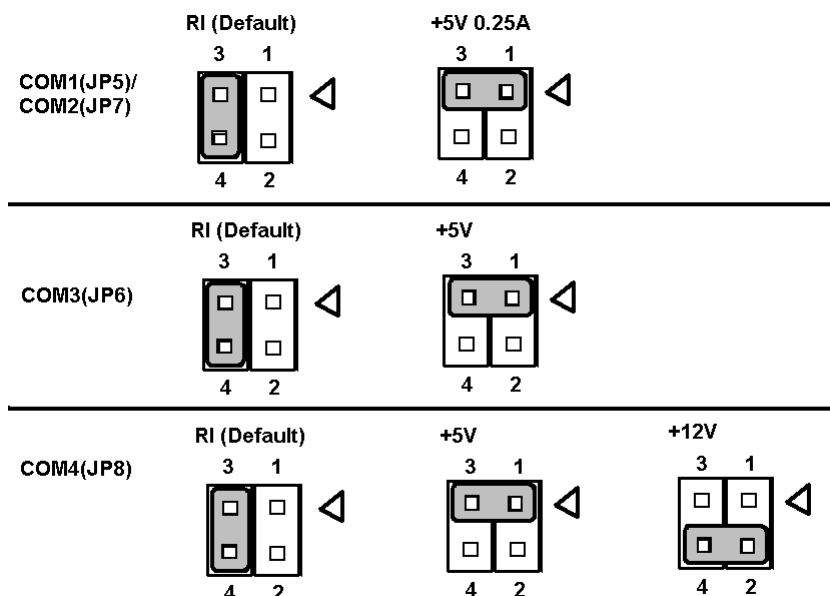
The IRQ and the address ranges for COM1, 2, and 3 are fixed.

However, if you wish to disable the port or change these parameters later you can do this in the system BIOS setup. The table overleaf shows the default settings for the panel PC's serial ports. COM1 and COM2 are one set. You can exchange the address range and interrupt IRQ of COM1 for the address range and interrupt IRQ of COM2. After exchanging, COM1's address range is 2F8 ~ 2FF and its request IRQ is IRQ3; and COM2's address range is 3F8 ~ 3FF and its interrupt IRQ is IRQ4. COM3 are another set. Their selectable function is the same as the COM1/COM2 set.

***Table B.3: Serial port default settings***

<b>Port No.</b>	<b>IO Address Range</b>	<b>Interrupt Request</b>
COM1	3F8 ~ 3FF	IRQ4
COM2	2F8 ~ 2FF	IRQ3
COM3	3E8 ~ 3EF	IRQ10

### B.3.2 COM1/COM2/COM3 Pin9 Output Type Setting (JP4/JP6/JP5)



*Figure B.5: COM port Pin9 configuration*

*Table B.4: COM Port Pin9 Output Type Configuration (JP5/JP6/JP7/JP8)*

Pin No.	Open/Closed	Function Description
Pin3,4	Closed	COM1/COM2/COM3 port Pin9 Ring (Default)
Pin1,3	Closed	COM1/COM2/COM3 port Pin9 output +5V

\* This function is for JP8 only.

## **B.4 Watchdog Timer Configuration**

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An onboard watchdog timer reduces the chance of disruptions which EMP (electromagnetic pulse) interference can cause. This is an invaluable protective device for standalone or unmanned applications. (Refer to Appendix D.)

## Hardware Installation

This appendix describes hardware installation.

Sections include:

- Overview of Hardware Installation and Upgrading
- Disassembling the Panel PC
- Installing the 2.5" Hard Disk Drive (HDD)
- Installing the Central Processing Unit (CPU)

# Appendix C Hardware Installation

## C.1 Overview of Hardware Installation and Upgrading

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The Point of Care Terminal consists of a PC-based computer that is housed in a plastic rear panel and a metal shielding case. Your HDD, DDR2 DRAM, power supply, CPU, and so on are all readily accessible by removing the rear panel and shielding case. Any maintenance or hardware upgrades can be easily completed after removing the rear panel and shielding case.

<i>Note</i>	<i>The color LCD display installed in the Point of Care Terminal is high quality and reliable. However, it may contain few defective pixels which do not always illuminate. With current technology, it is impossible to completely eliminate defective pixels. Advantech is actively working to improve this technology.</i>
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<i>Warning</i>	<i>Do not remove the plastic rear cover until you have verified that no power is flowing within the panel PC. Power must be switched off and the power cord must be unplugged. Every time you service the panel PC, you should be aware of this.</i>
----------------	--

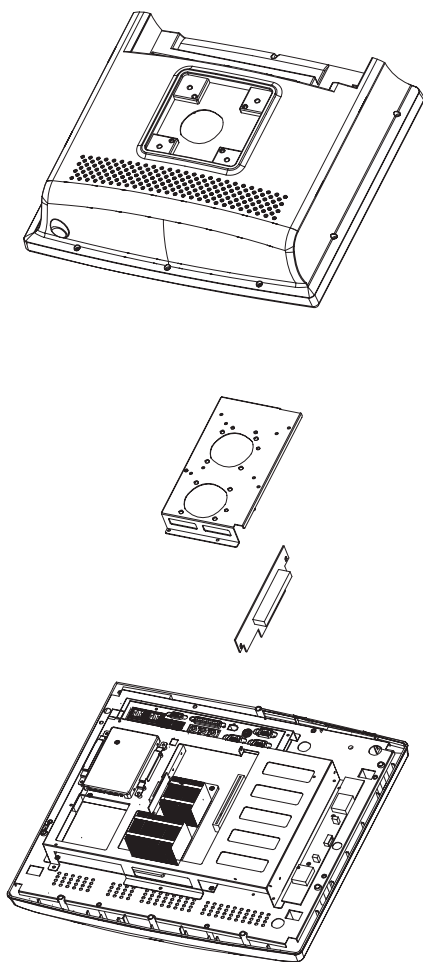


## C.2 Disassembling the Panel PC

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The following are standard procedures for disassembling the Point of Care Terminal before you upgrade your system. All procedures are illustrated in Figure C-1.

1. Unscrew the screws that secure the plastic rear cover, and then remove the cover.
2. Unscrew the screws that secure the metal fan cover.

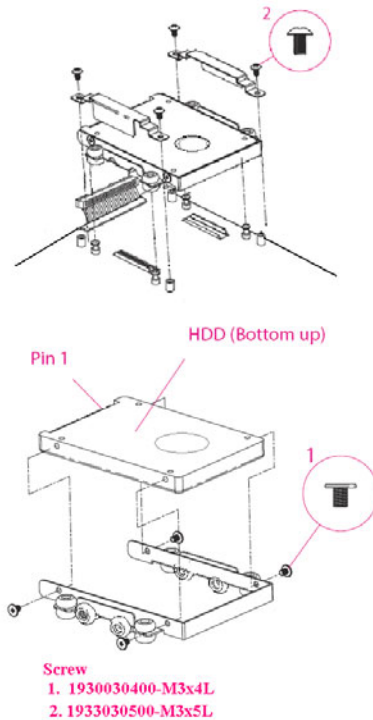


**Figure C.1: Disassembling the plastic rear cover of the POC-155**

## C.3 Installing the 2.5" Hard Disk Drive (HDD)

You can attach one enhanced Integrated Device Electronics (IDE) hard disk drive to the Point of Care Terminal's internal controller which uses a PCI local-bus interface. The following are instructions for installation:

1. Detach the HDD bracket by unscrewing the four screws (#2) on the top of the HDD bracket.
2. Place the HDD inside the HDD bracket and tighten four screws (#1) from both sides of the HDD bracket.
3. The HDD cable (1 x 44-pin to 1 x 44-pin) is next to the HDD bracket. Connect the HDD cable to the POC-155. Make sure that the red wire corresponds to Pin 1 on the connector (CN6), which is labeled on the board. Plug the other end of the cable into the HDD, with Pin 1 on the cable corresponding to Pin 1 on the HDD.



**Figure C.2: Installing the primary 2.5" HDD**

## C.4 Installing the Central Processing Unit (CPU)

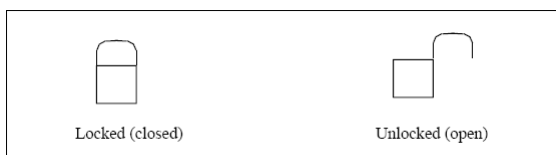
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The Point of Care Terminal's central processing unit (CPU) can be upgraded to improve system performance. The Point of Care Terminal provides one 479-pin socket (Socket 479). The CPU must come with an attached heat sink and CPU fan to prevent overheating.

<b>Warning</b>	<i>The CPU may be damaged if operated without a heat sink and a fan.</i>
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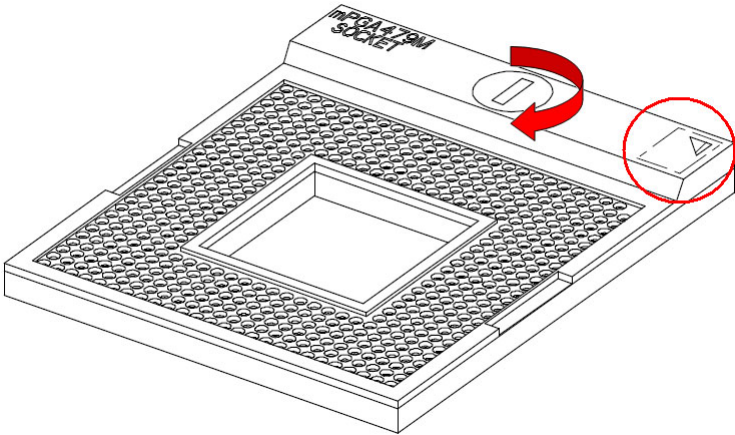
<b>Caution</b>	<i>Always disconnect the power cord from your panel PC when you are working on it. Do not make connections while the power is on as sensitive electronic components can be damaged by the sudden rush of power. Only experienced electronics personnel should open the panel PC.</i>
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1. Detach and remove the plastic rear cover.
2. Unscrew the screws that secure the metal fan cover.
3. Detach the CPU fan power cable from the fan connector and remove the four screws of the heat sink. This will expose the entire CPU assembly underneath.
4. Locate the mPGA479M socket, then find the Locked and Unlocked positions on the socket.



5. Insert the CPU with the correct orientation. The notched corner of the CPU (with the white dot) should point towards the triangle symbol on the socket.

6. Slide the CPU in gently, and make sure the pins of the CPU correspond with the holes of the socket. **DO NOT USE EXCESSIVE FORCE!**



7. Lock the CPU socket by turning the lock clockwise. The plate will slide across slightly.
8. Place the heat sink on top of the CPU and fasten it with the heat sink clip.
9. Connect the CPU fan power cable to the 3-pin connector (FAN1).
10. Put back the metal fan cover, and secure it with four screws.

# APPENDIX **D**

## **Programing the Watchdog Timer**

This appendix describes programming the watchdog timer.

## Appendix D Programming the Watchdog Timer

To program the watchdog timer, you must write a program which writes I/O port address 443 (hex). The output data is a time interval value. The value range is from 01 (hex) to 3E (hex), and the related time interval is from 1 sec. to 62 sec.

Data	Time Interval
------	---------------

01	1 sec.
----	--------

02	2 sec.
----	--------

03	3 sec.
----	--------

04	4 sec.
----	--------

•	•
---	---

•	•
---	---

•	•
---	---

3E	62 sec.
----	---------

After data entry, your program must refresh the watchdog timer by rewriting the I/O port 443 (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read I/O port 443 (hex).

The following example shows how you might program the watchdog timer in BASIC:

```
10      REM  Watchdog timer example program
20      OUT &H443, data REM  Start and restart the
      watchdog
30      GOSUB 1000 REM  Your application task #1,
40      OUT &H443, data REM  Reset the timer
50      GOSUB 2000 REM  Your application task #2,
60      OUT &H443, data REM  Reset the timer
70      X=INP (&H443) REM, Disable the watchdog timer
80      END

1000    REM  Subroutine #1, your application task
•      •
•      •
•      •
1070    RETURN
2000    REM  Subroutine #2, your application task
•      •
•      •
•      •
2090    RETURN
```

***Figure D.1: Watchdog programming example in the BASIC Language***





# APPENDIX E

## VESA Mounting

This appendix describes VESA mounting.

# Appendix E VESA Mounting

## E.1 Install VESA Mounting

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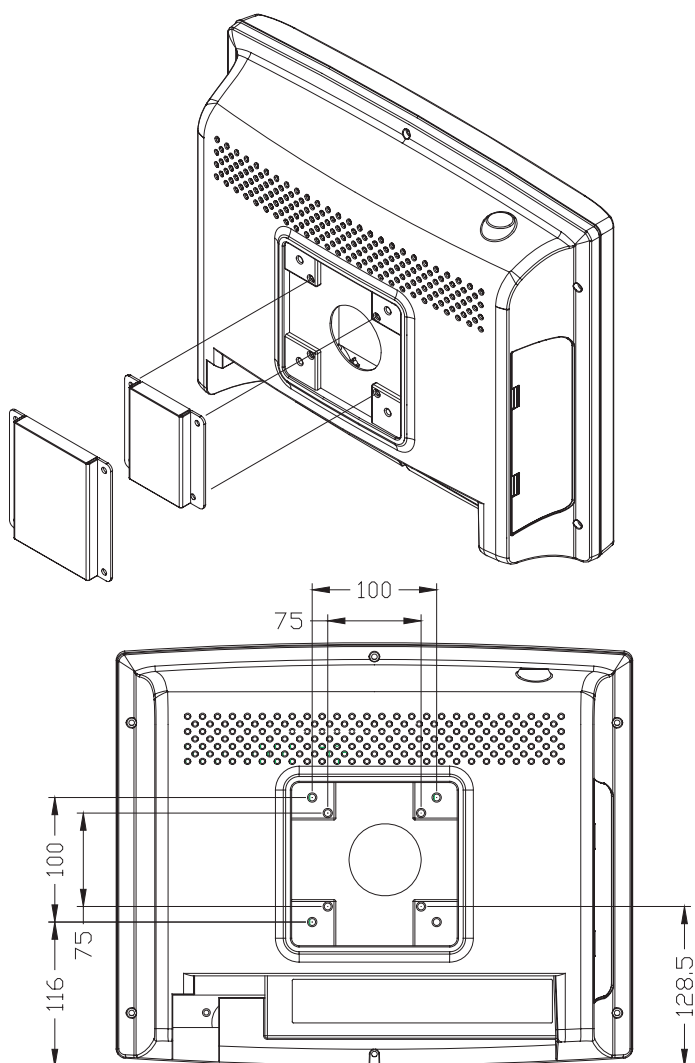
The POC-155 also provides standard VESA mounting to help system integrators conveniently integrate the panel PC into their system.

Never use the mounting brackets except for providing by Advantech to prevent the unreliable fixing of POC-155. VESA mount installation should be carried out by a professional technician. Please contact a service technician or your retailer if you need this service.

Installation instructions follow:

1. The wall-mounting attachment is comprised of two parts: one back bracket, and one mounting bracket. Attach the back bracket to the rear cover of the POC-155, securing it in place with four of the Phillips-head screws provided.
2. Attach the mounting bracket to a wall or other flat surface. The back bracket slides vertically from the top into the mounting bracket. It can be secured to the mounting bracket by screwing four of the Phillips-head screws provided through the corresponding holes at the tops of the mounting bracket.

<b>Warning</b>	<i>Be sure to tighten the screws of the mounting bracket. If the POC-155 and mounting bracket are loosely coupled, injuries or damage could occur.</i>
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**Figure E.1: VESA mounting dimension diagram (75 x 75 mm, 100 x 100 mm )**

